

New Records of Marine Fishes from the Carolinas,
With Notes on Additional Species

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ABSTRACT.— The distributional status of fifteen marine fishes from Carolina waters is discussed. Eleven are new records to the area, the remainder being species previously or presently considered rare. The second collected specimen of *Daramattus americanus* and the first from the Carolinas is reported and illustrated. New maximum size records are established for *Paraconger caudilimbatus*, *Lepophidium jeannae*, and *Hemanthias leptus*. Some reproductive data are included for *Prionotus stearnsi*.

Biological sampling in North and South Carolina marine waters continues to yield fishes new to or once considered rare in the area (e.g., Graffe 1972; Ross and Fast 1977; Anderson et al. 1979; Burgess et al. 1979; Böhlke and Ross 1981). Most of the species recently reported from the Carolinas occurred in reef areas and had tropical affinities (Anderson and Guthertz 1964; Ross and Fast 1977; Anderson et al. 1979). The fishes in this report represent a mixture of zoogeographic affinities and habitat associations. Eleven of the fifteen species reported are new records to this area and the remainder are species presently or previously considered rare.

Specimens were collected by trawl, hook and line, gill net, seine, and by sampling the traveling screens of Carolina Power & Light Company's Brunswick Steam Electric Plant (BSEP) on the lower Cape Fear River at Southport, North Carolina. Standard lengths are given unless otherwise noted. Nomenclature follows Robins et al. (1980). Specimens are deposited at the Florida State Museum, University of Florida (UF) and the University of North Carolina Institute of Marine Sciences (UNC).

CONGRIDAE

Paraconger caudilimbatus (Poey). The margintail conger is a rarely collected species previously reported from the Bahamas, southeastern coast of Florida near St. Lucie Inlet, Cuba, the Gulf of Mexico, and Guiana (Kanazawa 1961; Böhlke and Chaplin 1968; Randall et al. 1977). Manooch (1975) reported specimens tentatively identified as *P. caudilimbatus* from Carolina waters. We add the following records off of North Carolina: 33° 07'N, 77° 49'W, 58 m, 11 November 1978, night trawl over live bottom (404 mm TL; UF 30590); 33° 57'N, 76° 28'W, 61 m, 8 December 1978, night hook and line over live bottom (542 mm TL; UF 30591); and \approx 34° 30'N, 75° 50'W, \approx 61 m, February 1979, night hook and line over live bottom (455 mm TL; UF 30592). The above collections were during darkness and near live bottom, suggesting that this species, like other congrids, is nocturnal and may seek shelter in reefs during the day. All of the above specimens exceed the maximum size (356 mm TL) recorded by Böhlke and Chaplin (1968).

GADIDAE

Melanogrammus aeglefinus (Linnaeus). The haddock normally occurs in northern waters on both sides of the Atlantic, ranging along North America from Newfoundland to deep waters off Cape Hatteras (Leim and Scott 1966). Bigelow and Schroeder (1953) mentioned that haddock are seldom caught near shore and perhaps never in the littoral zone or brackish waters. On 10 March 1979, two specimens were captured by gill net in the Neuse River, North Carolina, between Adams Creek and South River (\approx 35° 00'N, 76° 38'W, \approx 3 m). Both were about the same size, but only one was retained (417 mm; UF 27969). Water temperature and salinity recorded in the capture vicinity on 9 March 1979 were 16° C and 4 0/00, respectively. This collection represents the southernmost and one of the most inshore records for haddock.

OPHIDIDAE

Brotula barbata (Schneider). One bearded brotula was collected from the BSEP traveling screens, Southport, North Carolina (Cape Fear River) on 18 July 1975 (192 mm; UF 30595). The previously recorded range of *B. barbata* included one record from Bermuda (Beebe and Tee-Van 1933) and other records from the Caribbean (Jamaica and Cuba), Florida, and northern Gulf of Mexico (Hubbs 1944). Our record represents the northernmost extent of this species, which appears to be rare north of the Gulf of Mexico.

Lepophidium jeannae Fowler. Although *L. jeannae* was recorded from Raleigh Bay, North Carolina (Silver Bay Station 1268, Bullis and Thompson 1965), Hoese and Moore (1977) reported its northernmost occurrence as Georgia. This species was also listed from the Cape Fear

area by Wenner et al. (1979b, 1980). Four mottled cusk eels were collected off Cape Fear, North Carolina ($33^{\circ}06'N$, $77^{\circ}51'W$, 67.7 m) by trawl in an area of sand and live bottom on 11 November 1978 (230 mm, 249 mm, 258 mm, 270 mm; UF 30599). Our specimens were much larger than the size (200 mm) given by Hoese and Moore (1977) and generally larger than those (238 mm max.) examined by Robins (1960).

HOLOCENTRIDAE

Myripristis jacobus Cuvier. The blackbar soldierfish was reported from tropical Atlantic waters of Florida, the Bahamas, the northern Gulf of Mexico and through the Caribbean to Brazil (Hoese and Moore 1977). Dahlberg (1975) mentioned that this species occurs in deeper waters off the Georgia coast and Powles and Barans (1980) reported one specimen off Charleston, South Carolina. Two specimens, both gravid females (91 and 99mm; UF 30598), were trawled off Cape Fear, North Carolina ($33^{\circ}03'N$, $78^{\circ}02'W$, 42 m) during the early morning hours of 27 June 1978. Their occurrence during darkness is not surprising, considering that holocentrids are nocturnal feeders, typically hiding under ledges or in caves during the day (Randall 1968; Greenfield 1974). This behavior would make them practically inaccessible to trawl capture during daylight and may result in underestimations of their occurrence.

GRAMMICOLEPIDAE

Daramattus americanus (Nichols and Firth). The grammicolepid fishes are generally deep sea, widely scattered, and rarely collected. Worldwide there are five recognized species, but there is considerable confusion concerning validity and relationships, particularly in the genus *Daramattus*. Lack of specimens for study and lack of understanding of the effects of allometric growth contribute to this confusion. Smith (1960) described *Daramattus*, including two species: one new, *D. armatus*, and one originally described as *Xenolepidichthys americanus* by Nichols and Firth (1939). Only four specimens were known to Smith, three of which seemed to be *D. armatus* from Japan (1) and South Africa (2) and the fourth (*D. americanus*) from Georges Bank in the Western Atlantic. One of the two South African specimens of *D. armatus* was later redescribed as *D. barnardi* (Smith 1968).

According to Hugh H. Dewitt (pers. comm.) the type of *D. americanus* has 13 gill rakers and 39 total dorsal elements, not 20 and 38, respectively, as given by Nichols and Firth (1939). Considering this change, our single specimen collected off North Carolina by trawl on 29 September 1979 at $33^{\circ}32'N$, $76^{\circ}39'W$, 232 m (56 mm; UF 30669) seems referable to *D. americanus*. Meristic and morphometric data are presented in Table 1. Fresh coloration was as follows: body generally silvery, shading dorsally to a darker blue-gray; dark, spiny projections

Table 1. Meristic and morphometric data for *Daramattus americanus* (UF 30669). All measurements made to the nearest 0.1 mm with dial calipers.

Counts	
Dorsal	VI, 32
Anal	II, 34
Pectoral	15, 15
Gill rakers (total)	14, 15
Spiny body scutes (excluding postorbital spine)	11, 11
Spines along anal base (left)	34
Spines along dorsal base (left)	33
Measurements	
SL	56.3
TL	94.4
Depth	46.5
Horizontal eye diameter	7.9
Head length	16.9
First dorsal spine	28.3
Second dorsal spine	28.3
First anal spine	63.4
Pectoral length	7.0
Pelvic length	14.7
Pelvic origin to first anal spine	10.7
Pectoral base to pelvic origin	16.7

on body are included in the 14-15 dark, vertical stripes that vary in length; dorsal and pectoral fins clear; pelvic and anal fins with some black bands; caudal with 2-3 black bands (Fig. 1).

This is only the second specimen yet collected of this species; however, further study, especially on allometric growth effects, may reveal that *D. armatus* and *D. americanus* are conspecific.

GASTEROSTEIDAE

Gasterosteus aculeatus Linnaeus. A threespine stickleback was collected from the BSEP traveling screens on 21 February 1979 (52 mm; UF 30594). It was previously known only as far south as Chesapeake Bay (Burgess and Lee 1980).

Apeltes quadracus (Mitchill). The fourspine stickleback has previously been reported in North Carolina from a single specimen collected in the Trent River, Craven County (Rhode et al. 1979). We report two additional specimens from North Carolina: Stumpy Point Bay, Pamlico Sound, 18 February 1975 (40 mm; UF 30593), and a gravid

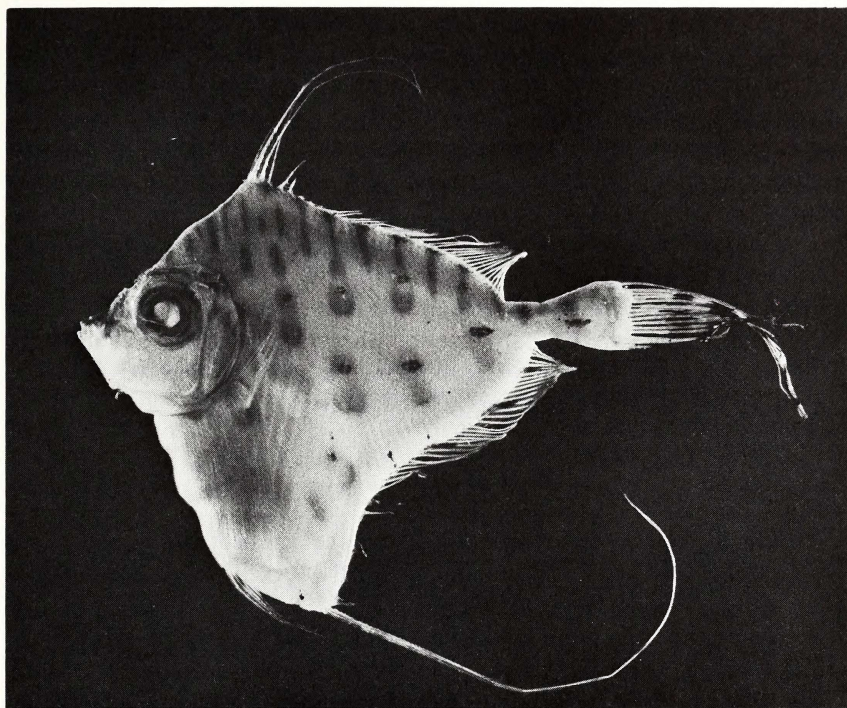


Fig. 1. *Daramattus americanus*, UF 30669, 56.3 mm SL specimen collected off North Carolina.

female from Shallowbag Bay, Roanoke Island, Dare County, 17 March 1978 (40 mm; UF 30670).

SYNGNATHIDAE

Oostethus brachyurus (Bleeker). The opossum pipefish, *O. b. lineatus*, is a relatively small tropical species commonly found in fresh and brackish waters of Central America, but only rarely reported from North America (see review in Gilmore 1977; Dawson 1979). Although Dawson (1979) reported its occurrence as far north as New Jersey, this species has not previously been recorded from North Carolina waters.

Six specimens were collected on five separate occasions from the BSEP traveling screens: 14 September 1976 (151 mm; UF 30605); 3 October 1976 (164 mm; UF 30673); 23 October 1976 (153 mm; UF 30674); 20 November 1978 (62 mm, 85 mm; UF 30607); and 5 December 1978 (89 mm; UF 30606). Collection salinities and temperatures ranged from 23.5 to 29.0 ‰ and 17.0 to 24.2°C, respectively. The three largest specimens were adult males with developed but empty brood pouches. Gilmore (1977) indicated that this species spawns from July through November in fresh water of the Indian River, Florida area. Dawson

(1970) also suggested that spawning in Mississippi waters occurred during the same period. Although adults seem to prefer fresh or estuarine environments, juveniles and larvae apparently spend some time in marine waters (Böhlke and Chaplin 1968; Gilbert and Kelso 1971; Hastings and Bortone 1976). Further sampling may reveal that *O. b. lineatus* is more common in North Carolina and that a breeding population exists.

Syngnathus elucens Poey. One shortfin pipefish was collected on 1 October 1968 at 34° 53'N, 75° 29'W (115 mm; UNC 9926). This represents a considerable range extension from the previously recorded distribution of Bermuda, the Bahamas, southern Florida, the northeastern Gulf of Mexico, and the Greater and Lesser Antilles to Surinam (Herald 1942; Böhlke and Chaplin 1968; Dawson 1972).

SERRANIDAE

Hemanthias leptus (Ginsburg). One specimen of the longtail bass was collected by hook and line in 168 m off Murrells Inlet, South Carolina, on 20 August 1979 (456 mm; UF 27790). This species was previously known only from the northwestern Gulf of Mexico (Hoese and Moore 1977), hence our record represents a significant range extension. This specimen also greatly exceeds the previously reported maximum size of 310 mm (Briggs et al. 1964). Although the specimen was poorly preserved, it did retain a yellowish lateral bar from the eye to the posterior margin of the opercle. The caudal fin was bright yellow, the soft anal and dorsal pale yellow, and the other fins nearly clear. The body was generally silver with a pale golden color dorsally. These colors, especially the yellow bar across the opercle, are similar to those of *H. vivanus* (Walls 1975; Hoese and Moore 1977). Meristics agreed well with those of Ginsburg (1952, 1954), except that lateral line scales were 73 (left) and 59 (right), and Ginsburg gave a range of 78 to 86. Discrepancies may be due to the poor condition of our specimen.

HAEMULIDAE

Anisotremus surinamensis (Bloch). The black margate is known from the Bahamas, southern Florida, throughout the Caribbean and Gulf of Mexico to Brazil (Hoese and Moore 1977). Collections from the Wrightsville Beach, North Carolina area were noted by Anderson et al. (1979). A single specimen of this reef species was collected on the BSEP traveling screens on 27 December 1979 (86 mm; UF 30597).

MICRODESMIDAE

Microdesmus longipinnis (Weymouth). Pink wormfish reportedly occur in shallow water from Charleston, South Carolina (Hammond

1973) through the northern Gulf of Mexico, Cayman Islands, and Bermuda (Dawson 1969). Two specimens were collected in the lower Cape Fear River, North Carolina: one from the BSEP traveling screens (237 mm; UF 30596) on 23 March 1977, and the other from an unknown locality in the lower Cape Fear River (67 mm; UF 30671). A third specimen from the lower Cape Fear, unavailable for study, is deposited in the UNC collections. Our collections represent the first records of microdesmids in North Carolina.

TRIGLIDAE

Prionotus ophryas Jordan and Swain. The bandtail searobin was first reported from North Carolina waters by Bullis and Thompson (1965): 34° 00.5'N, 76° 21'W, 54-60 m, 5 September 1979, and subsequently by Wilk and Silverman (1976): 34° 20'N, 76° 52'W, 25 m, 17 November 1971 (200 mm TL); 34° 11.5'N, 76° 47'W, 31 m, 16 November 1971 (140 mm TL); 33° 27.5'N, 77° 24'W, 32 m, 24 May 1972 (190 mm TL). We have compiled a number of additional records from R/V *Dan Moore* surveys and other collections (Table 2), which include the northernmost record (DM 3754) of this species. Most *P. ophryas* were collected over sand bottoms; however, they are known to occur near live bottoms (S. W. Ross, pers. obs.) and calico scallop beds (Schwartz and Porter 1977; pers. obs.). Although not one of the most common of the offshore searobins, this species is regularly encountered in a depth range of 24 to 60 m (Table 2).

Prionotus stearnsi Jordan and Swain. Fourteen shortwing searobins were collected by trawl on three occasions: 33° 41'N, 76° 42'W, 152 m, 19 May 1978 (63 mm; UF 30601); 33° 02'N, 77° 53'W, 113 m, 27 June 1978 (76-105 mm; UF 30602); and 34° 29'N, 75° 58'W, 57 m, 13 December 1978 (92 mm; UF 30600). The June collection contained six females with ripe gonads, data for which are included in Table 3. Very ripe females (125 and 130 mm) were reported in August near the Tortugas by Longley and Hildebrand (1941). Lewis and Yerger (1976) suggested that both sexes reach maturity by 60 mm and found well developed ova (0.6 mm diameter) in October and December. The large gonads and eggs from the June specimens (Table 3) indicated that these fish were probably near spawning. Shortwing searobins had previously been reported from off Cape Fear, North Carolina (Bullis and Thompson 1965; Wenner et al. 1979a, 1979b), although Roberts-Goodwin (1981) had listed them as far north as South Carolina and Hoese and Moore (1977) only north to Georgia.

Table 2. Collection data for *Prionotus ophryas* off the Carolinas. DM = R / V Dan Moore station number; GWL = G. W. Link collection number.

No.	Data	Remarks
DM 3267	33° 58'N, 77° 12'W, 31.1 m, 4 Oct. 1977	1-Gravid ♀, 172 mm, UNC 13843
DM 3327	33° 09'N, 78° 05'W, 33.0 m, 7 Nov. 1977	1-Gravid ♀, 147 mm, UF 24583
DM 3352	34° 07'N, 77° 13'W, 29.3 m, 16 Nov. 1977	
DM 3385	31° 56'N, 79° 43'W, 40.2 m, 18 Jan. 1978	
DM 3386	31° 56'N, 79° 42'W, 45.7 m, 18 Jan. 1978	1- ♀, 104 mm, UNC 14708
DM 3652	34° 16'N, 77° 08'W, 25.6 m, 21 Sep. 1978	
DM 3727	33° 20'N, 78° 07'W, 29.3 m, 10 Nov. 1978	
DM 3728	33° 19'N, 78° 12'W, 29.3 m, 10 Nov. 1978	
DM 3736	33° 04'N, 77° 57'W, 47.5 m, 11 Nov. 1978	4 Specimens
DM 3744	34° 07'N, 76° 38'W, 36.6 m, 15 Nov. 1978	1 Specimen
DM 3751	34° 27'N, 76° 17'W, 32.9 m, 6 Dec. 1978	1 Specimen
DM 3754	34° 33'N, 76° 03'W, 40.2 m, 6 Dec. 1978	1 Specimen
DM 3850	34° 28'N, 76° 14'W, 36.6 m, 8 Mar. 1979	1- ♂, 98 mm, UNC 15242
DM 3911	33° 27'N, 78° 07'W, 23.8 m, 15 Oct. 1979	
DM 3915	33° 09'N, 78° 04'W, 34.7 m, 17 Oct. 1979	
DM 3922	33° 04'N, 77° 58'W, 42.1 m, 21 Oct. 1979	1, 106 mm, UF 30672
DM 3923	34° 00'N, 76° 24'W, 47.5 m, 21 Oct. 1979	1, 118 mm, UF 30603
DM 4280	34° 27'N, 76° 16'W, 32.9 m, 20 Jan. 1980	1, 93 mm, UF 30604
GWL-73-5	East of Cape Lookout on Scallop	
GWL-73-10	Grounds, 30.5 m, 30 Apr. 73	
	34° 28.8'N, 76° 16'W, 32.3 m, 23 May. 1973	1- ♂, 114 mm, UNC 7852
		1- ♂, 142 mm, UNC 7921
		1-Gravid ♀, 119 mm, UNC 7921
GWL-81-1	East of Cape Lookout on Scallop	
	Grounds, 30.5 m, 27 Mar. 1981	1, 103 mm

Table 3. Length, weight, and sex data of *Prionotus stearnsi* collected on 27 June 1978 (UF 30602).

SL (mm)	Wt. (g)	Sex	Ovary wt. (g) ⁺	Gonad index*	Egg diameter size range (mm)
76	8.7	♀	0.3	3.45	0.4-0.7
83	13.1	♂			
88	12.4	♂			
88	11.7	♀	1.5	12.82	0.3-0.8
89	12.8	♀	0.8	6.25	0.3-0.6
90	15.6	♂			
90	15.2	♂			
91	14.3	♂			
95	17.3	♂			
96	16.0	♀	0.7	4.38	0.4-0.7
97	15.7	♀	0.5	3.18	0.3-0.6
105	20.4	♀	0.6	2.94	0.5-0.8

+ Both gonads combined.

* Gonad index = gonad weight ÷ (body weight - gonad weight) × 100.

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